

Figure 1

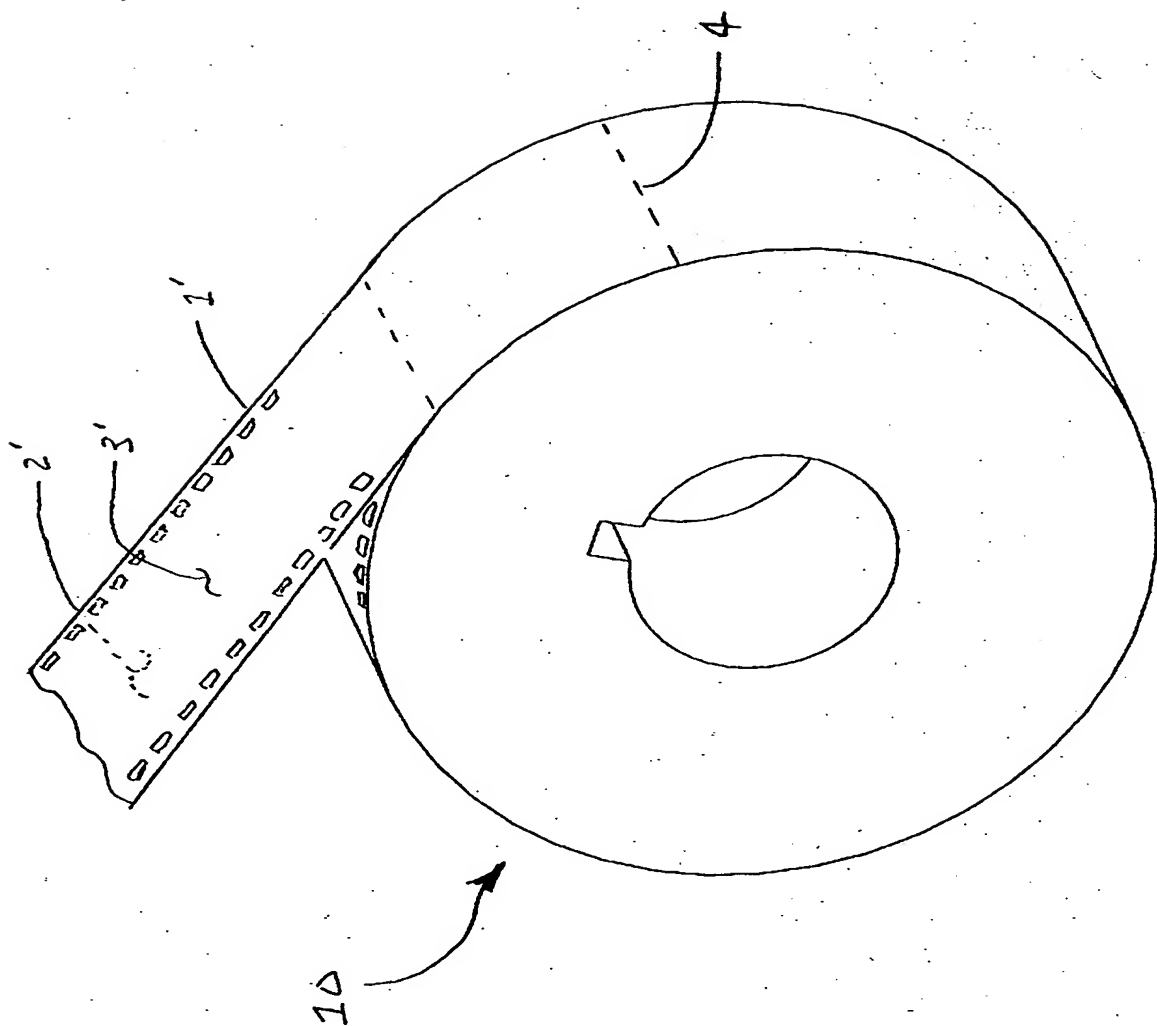


FIGURE 2

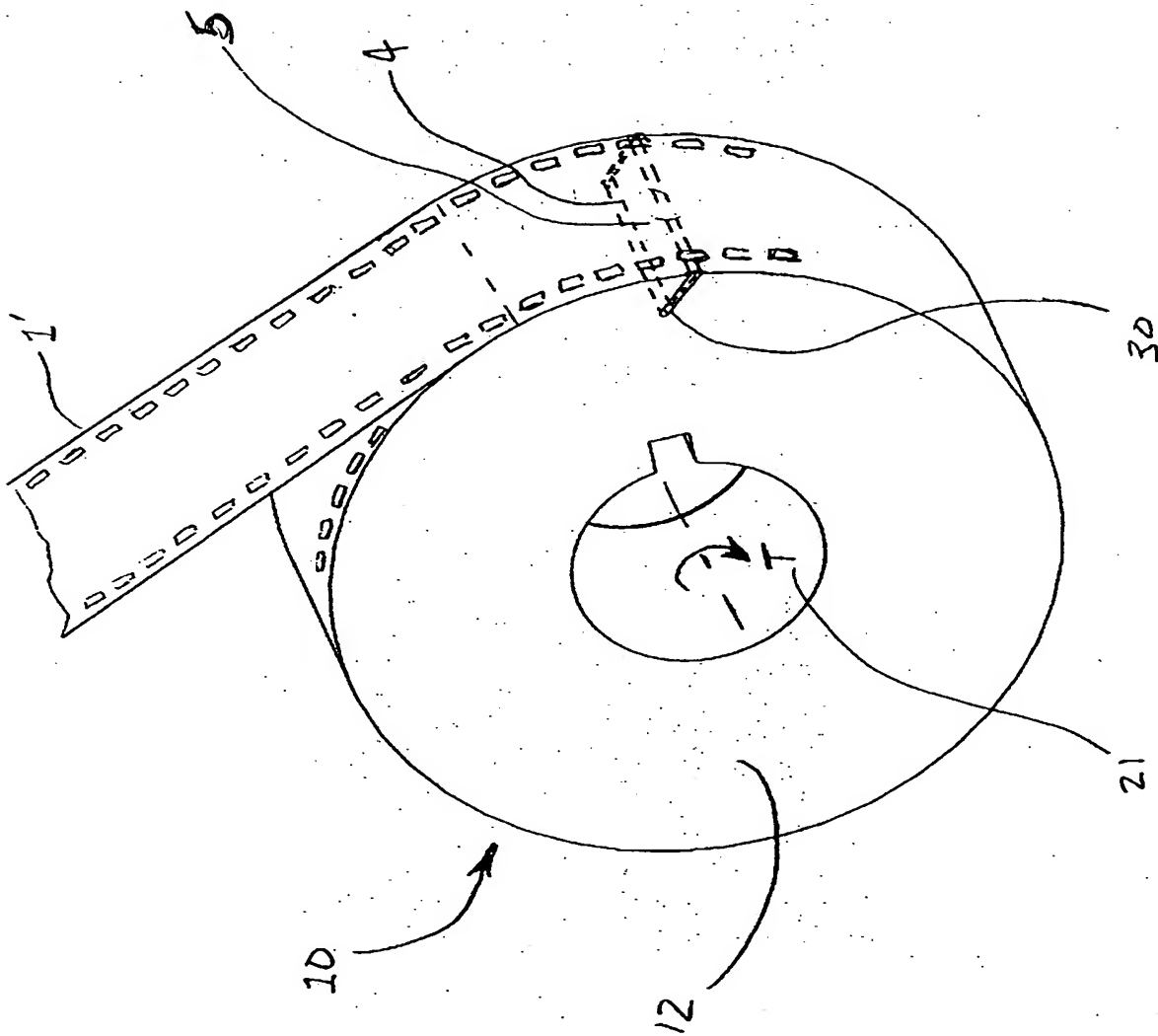


FIGURE 3

# Debris Comparison for Film Core Candidates (Ball)

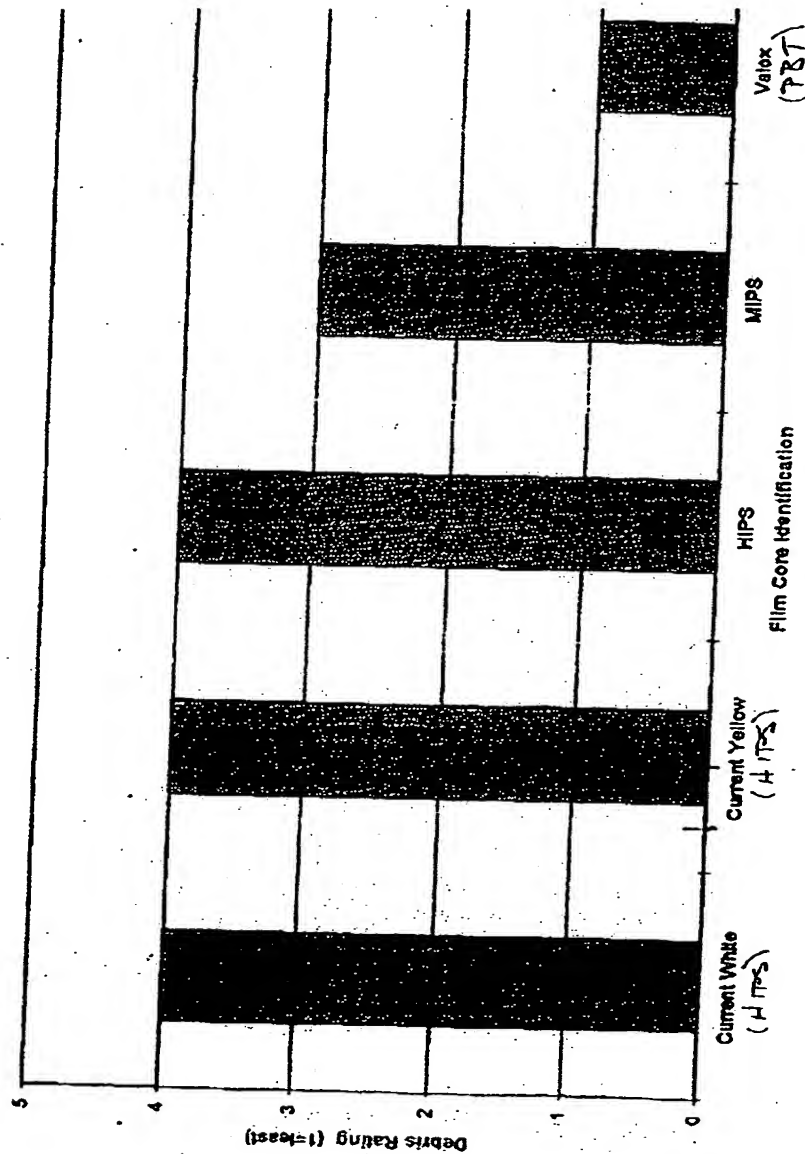
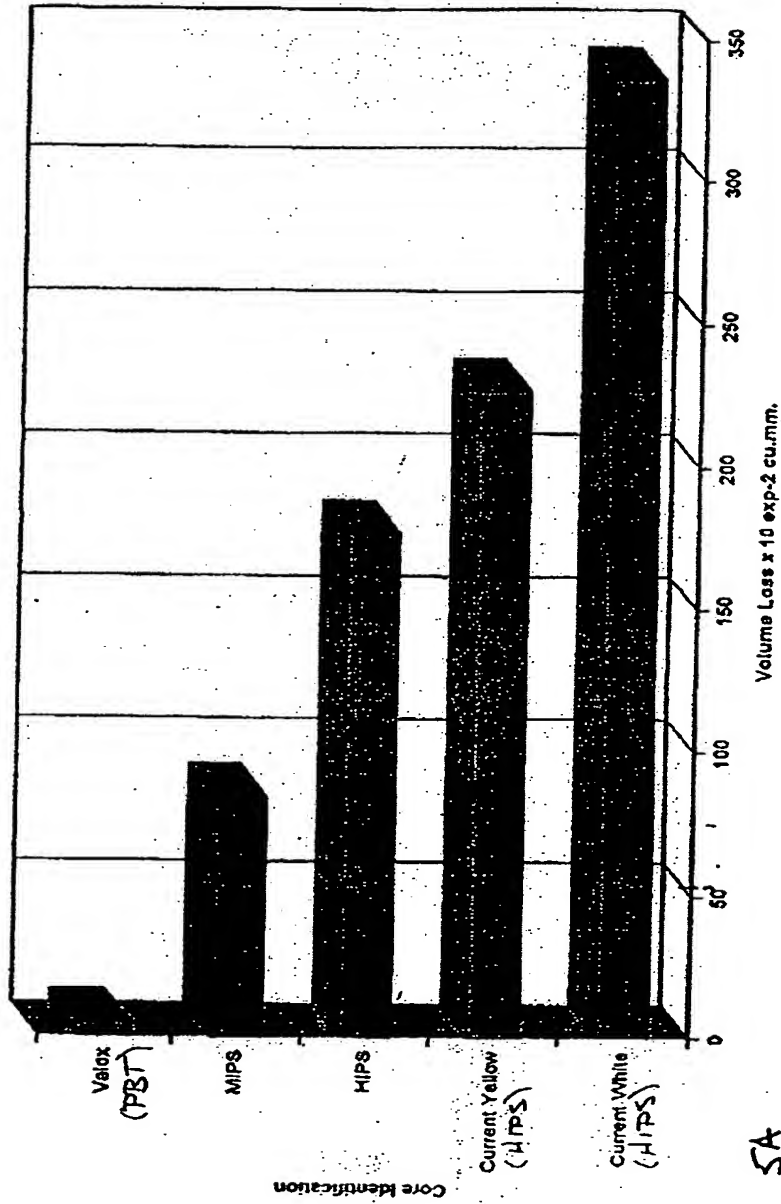


FIG 4: Ratings of debris accumulation on 316 Stainless Steel Balls

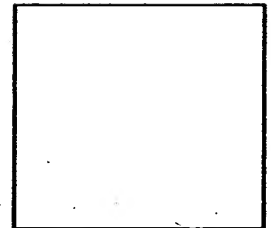
\* Rating per Kodak internal test method based on weight loss. The higher the number the greater the weight loss (debris generated).

Volume Loss of Film Cores

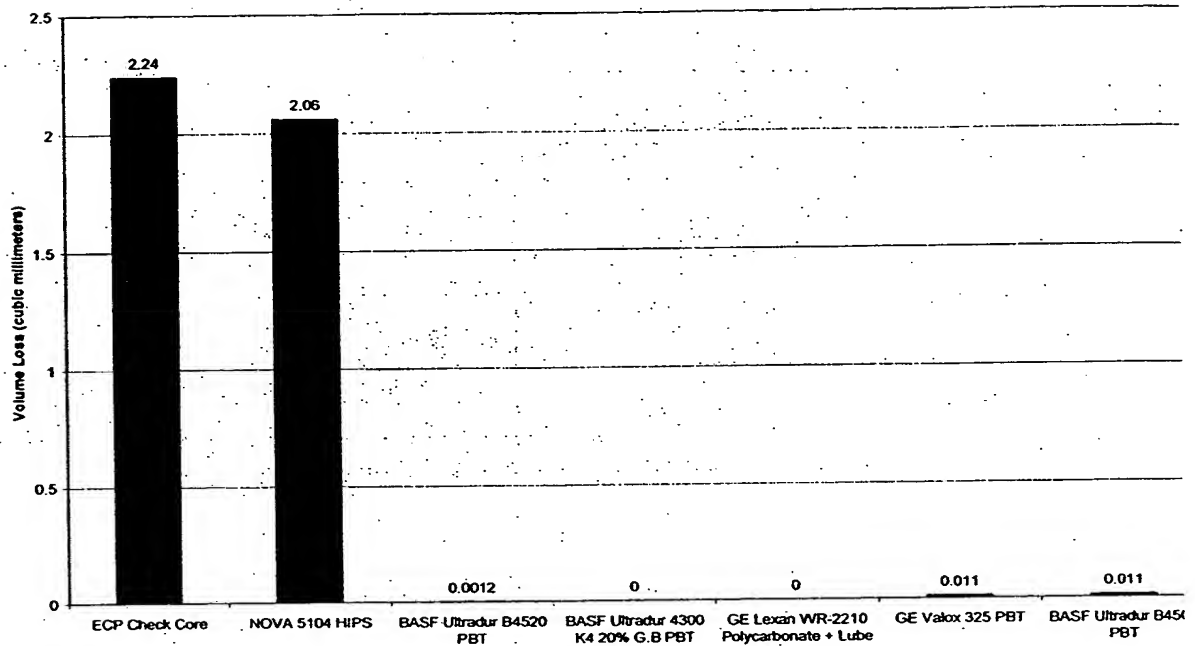


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FIG. 7: Average Volume Loss of Film Cores sliding vs. 316 SS



Volume Loss of Various Cores from 316 SS Ball



Volume Loss Measurements of Various Cores and Table of calculated Wear Rate Coefficients (k).

FIG. 5B QUANTITATIVE MEASUREMENTS

| SPI Finish            | Finish Type        | Mold Texture ( Ra<br>(microns, measured) | Coefficient of Friction |          |         |       |
|-----------------------|--------------------|--|-------------------------|----------|---------|-------|
|                       |                    |  | (+2 STD)                | (-2 STD) | Average | STD   |
| HIPS (Novacor "5104") | 600 Grit Paper     | 0.10                                     | 0.63                    | 0.53     | 0.58    | 0.027 |
| A1                    | #3 Diamond Buff    | 0.02                                     | 0.32                    | 0.28     | 0.30    | 0.012 |
| A3                    | #15 Diamond Buff   | 0.04                                     | 0.28                    | 0.24     | 0.26    | 0.01  |
| D2E                   | EDM, Charmilles 18 | 0.80                                     | 0.29                    | 0.23     | 0.26    | 0.015 |
| B1                    | 600 Grit Paper     | 0.10                                     | 0.24                    | 0.18     | 0.21    | 0.017 |
| D1                    | #12 Glass Bead     | 0.37                                     | 0.24                    | 0.18     | 0.21    | 0.017 |
| C3                    | 320 Stone          | 0.29                                     | 0.25                    | 0.17     | 0.21    | 0.021 |
| D2                    | #10 Glass Bead     | 0.37                                     | 0.26                    | 0.16     | 0.21    | 0.025 |
| C1                    | 600 Stone          | 0.32                                     | 0.21                    | 0.17     | 0.19    | 0.01  |
| B3                    | 320 Grit Paper     | 0.23                                     | 0.21                    | 0.15     | 0.18    | 0.015 |
| D3                    | EDM, Charmilles 24 | 1.57                                     | 0.2                     | 0.1      | 0.15    | 0.026 |

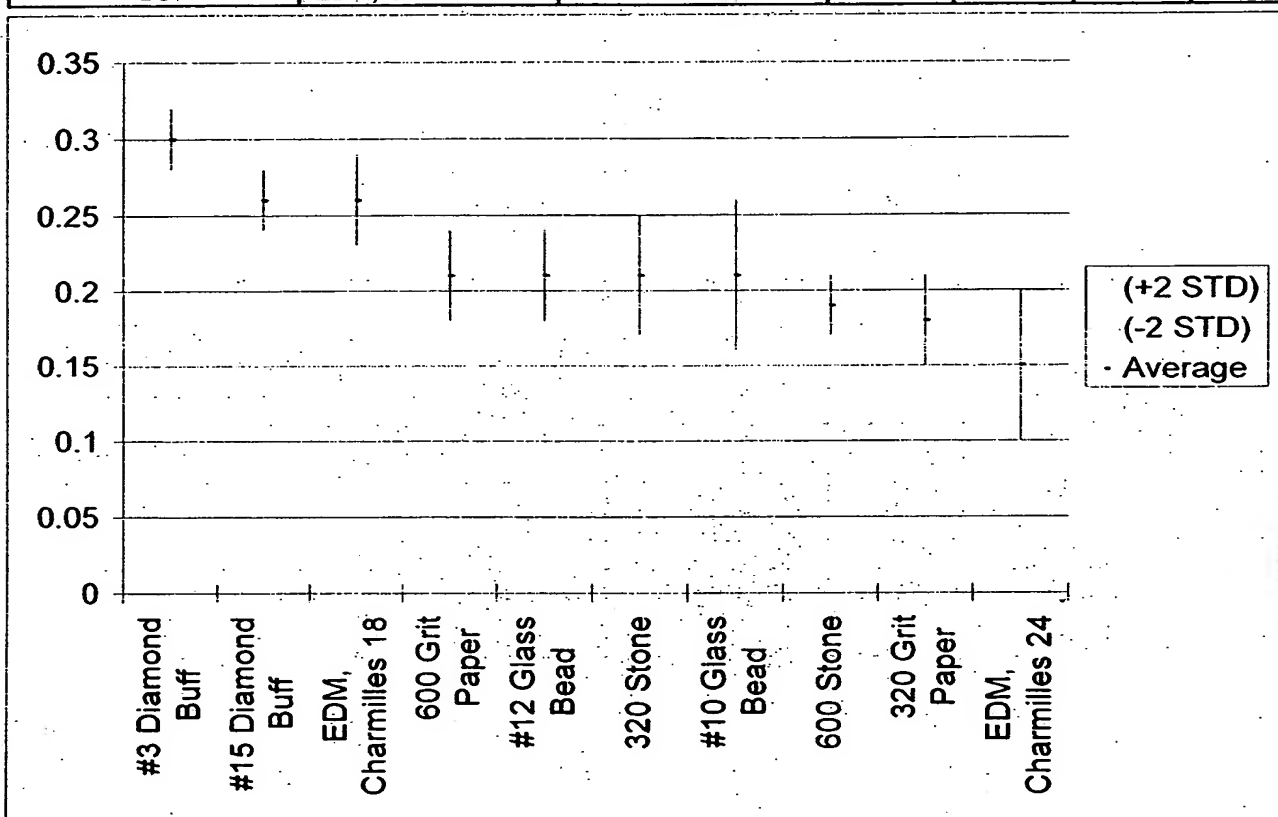


FIG 6: Static coefficient of friction of photographic film (emulsion side) against AISI type 316 stainless steel vs. mold surface texture

### Mechanical Property Comparison

|                    | HIPS<br>Nova "5104" | PBT<br>GE "Valox 325" |
|--------------------|---------------------|-----------------------|
| Tensile Elongation | 55%                 | 200%                  |
| Flexural Strength  | 62 MPa              | 83 MPa                |
| Tensile Strength   | 27 MPa              | 52 MPa                |
| Flexural Modulus   | 2,300 Mpa           | 2,300 MPa             |

**FIG 7: Mechanical property comparison for PBT v HIPS**



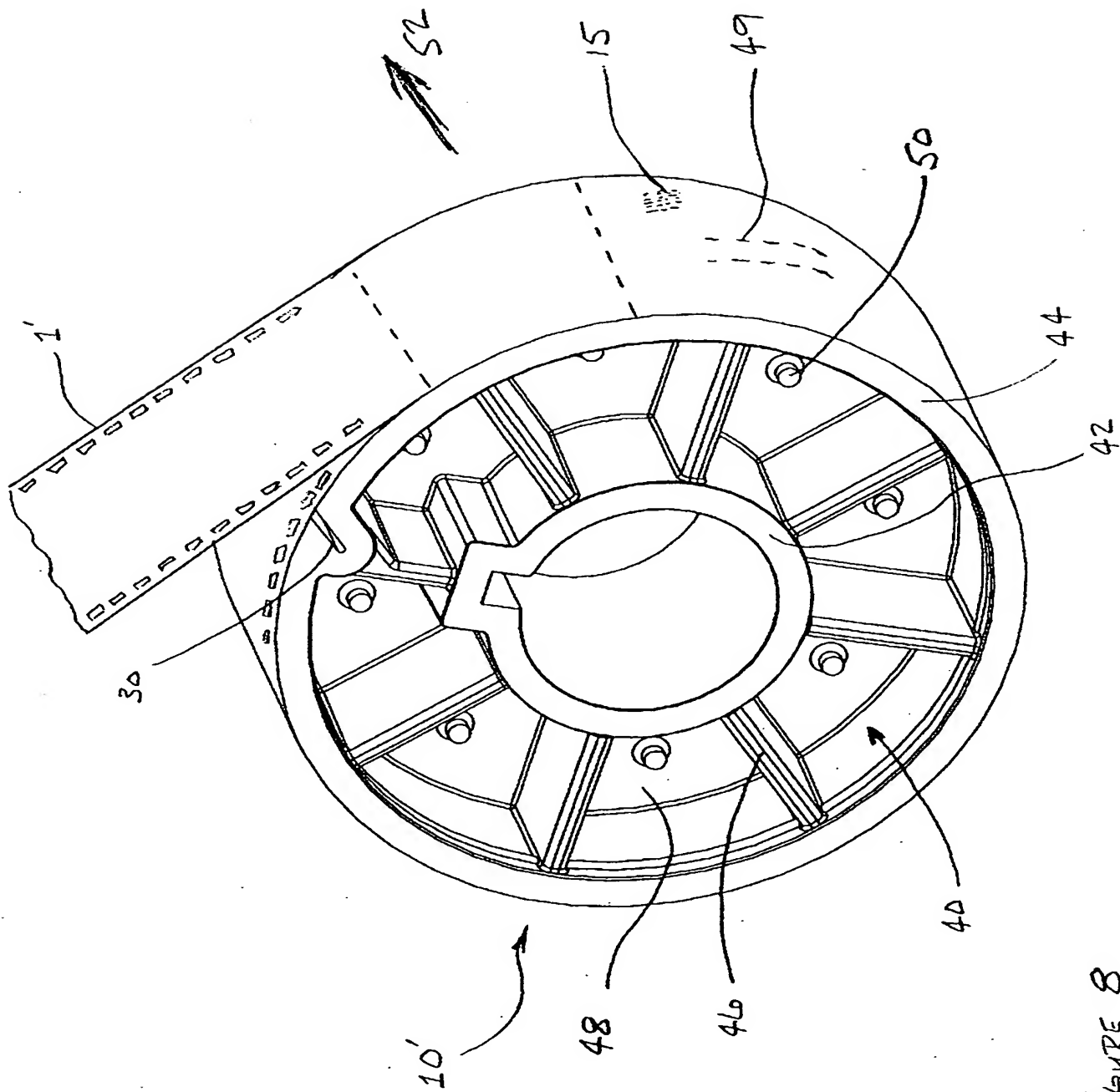


FIGURE 8